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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,378	05/20/2004	Koichi Miyachi	1035-510	6503

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EXAMINER	
CHIEN, LUCY P	
ART UNIT	**PAPER NUMBER**
2871	

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02/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/849,378	MIYACHI, KOICHI	
	Examiner	Art Unit	
	LUCY P. CHIEN	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 15-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Appeal Brief

In view of the appeal brief filed on 11/19/2007, PROSECUTION IS HEREBY REOPENED, the current Office Action replaces the previous Office Action filed 7/17/2007. New grounds of rejection are set forth below.

The examiner previously rejected the claims in view of Kim et al (US 6774967) in view of Kim et al (US 6356335) saying that Kim et al (US 6774967) did not show the protrusions being discontinuous and relying on Kim et al (US 6356335) to teach this feature; on further consideration, it appears to the examiner that Kim et al (US 6356335) does in fact disclose the protrusions being discontinuous as indicated in the following figure. The following 102 rejection of claims 1-7,9-13,15-30,32-40 is therefore appropriate, without any need to rely on the teaching of Kim et al (US 6356335). The Kim et al (US 6774967) reference has been replaced in the rejections below with its equivalent PGPUB reference (US 20010022643).

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth

in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-7,9-13,15-30,32-40 rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al (US 20010022643).

Regarding Claim 1,24,20

Kim et al discloses (Figure 8D) a pair of substrate (31,33) respectively having electrodes (17,13) on opposing surfaces, the pair of substrates sandwiching a liquid crystal layer (the space between 17 and 13). A plurality of domains (shown below) formed within a display region when a voltage is applied to the electrodes, the plurality of domains being such that liquid crystal molecules are aligned in different directions from domain to domain, at least one of the electrodes on the pair of substrates having an aperture section (shown below). The liquid crystal layer having a plurality protrusion section (53) which connects the electrodes (17,13) Kim et al discloses (Figure 14) a aperture (51) and protrusion section (53) extending across the liquid crystal layer and which connects the electrodes, and wherein the aperture section is bent in such a manner that sides of the aperture and protrusion section extend in directions which

respectively form about 45º with a long side and a short side of the display region. Wherein bent parts of the aperture section and bent parts of the protrusion section are discontinuous (see page 8 of this office action). And the bent parts of the protrusion section are located in regions corresponding to solid portions of the electrode.

Regarding Claim 2,25,

Kim et al discloses (Figure 8D) at least one of the electrodes (13) has a protrusion (53) as the protrusion section within the display region; and a height of the protrusion is identical to a thickness of the liquid crystal layer (shown above).

Regarding Claim 3,26

Kim et al discloses (Figure 8D) the protrusion (53) is provided to only one of the electrodes on the pair of substrates.

Regarding Claim 4,27,

Kim et al discloses (Figure 8D) the protrusion is provided to the electrode (17) which opposes the electrode (13) having the aperture section (51).

Regarding Claim 5,28,

Kim et al discloses (Figure 7A which is the section view of Figure 8D) there are domain boundaries at the protrusion section and at the aperture section, the domain boundaries being boundaries between the domains in which the liquid crystal molecules are aligned in different direction from domain to domain.

Regarding Claim 6,29,

Kim et al discloses (Figure 7A which is the section view of Figure 8D) the protrusion section is provided outside a region where, in a two-dimensional view, the aperture section is provided.

Regarding Claim 7,30

Kim et al discloses the protrusion section (53) is made of dielectric material. (Column6, rows 25-28).

Regarding Claim 9,21,32,

Kim et al discloses the liquid crystal layer has negative dielectric anisotropy. (Column 8, rows 23-28). The liquid crystal molecules are initially aligned vertically with respect to the electrodes. (Column 3, Rows 8-16)

Regarding Claim 10,33

Kim et al discloses a surface of the protrusion section is subjected to an alignment process which is different from an alignment process of regions other than the surface of the protrusion section.

The applicant is claiming, "a surface of the protrusion section is subjected to an alignment process which is different from an alignment process of regions other than the surface of the protrusion section." There is no affect on the structure therefore the alignment process doesn't affect the patentability of the device itself.

Regarding Claim 11,34,

Kim et al discloses a surface of the protrusion section is subjected to a horizontal alignment process so that the liquid crystal molecules are initially aligned in parallel with the surface of the protrusion section. (Column 10, rows 60-67, Column 11 1-5).

Regarding Claim 12,35,

Kim et al discloses an alignment film is provided to the display region of the pair of substrates, whereas no alignment film is provided to a surface of the protrusion section. (Column 10, Rows 39-46)

Regarding Claim 13,36,

Kim et al further discloses (figure 8D) the protrusion section is tilted with respect to a thickness direction of the air of substrates.

Regarding Claim 15,37,

Kim et al discloses (Figure 7A which is the section view of Figure 8D) the protrusion section (53) is provided in parallel with the aperture section.

Regarding Claim 16-18,38,39

Kim et al discloses (figure 14) the protrusion and aperture section is substantially V-shaped.

Regarding Claim 19,40

Kim et al discloses (figure 14) wherein the aperture secion includes one or more apertures defined in a pixel electrode.

Regarding Claim 22

Kim et al discloses (figure 14) wherein the protrusion section is substantially parallel to the aperture section.

Regarding Claim 23

Kim et al discloses wherein the protrusion section extends across the liquid crystal layer (Fig. 8d) and is made of a different material than is the liquid crystal.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 8,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 20010022643) in view of Takeda et al (US 6724452).

Regarding Claim 8,31,

Kim et al discloses everything as disclosed above.

Kim et al does not disclose the protrusion section is made of a light-shielding material.

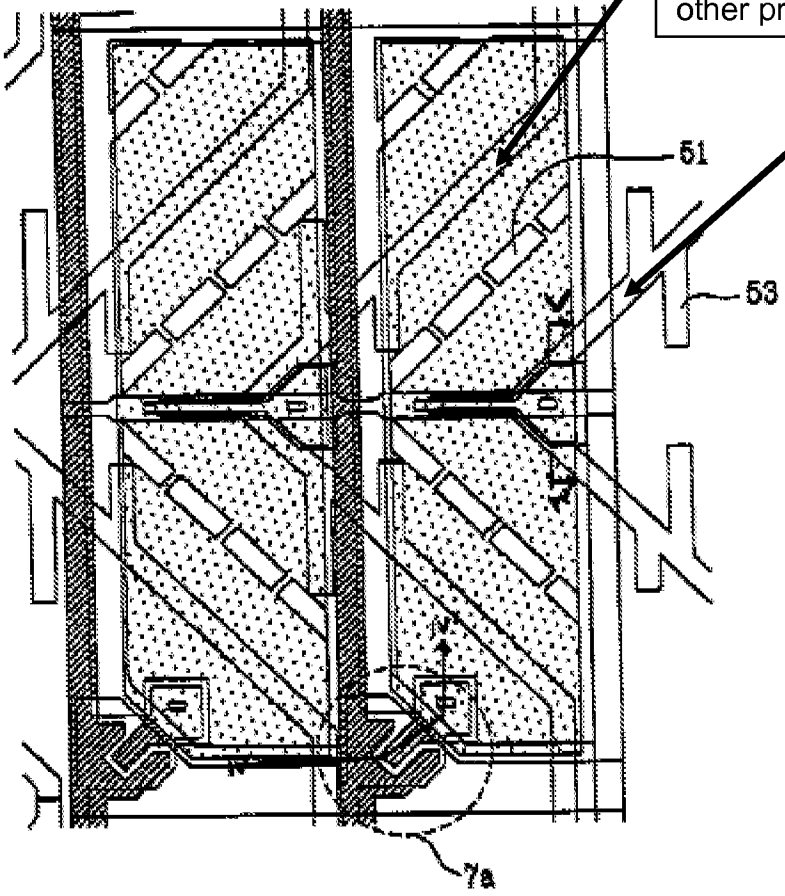
Takeda et al disclose (Column 26, Rows 32-38) the protrusion made of light-shielding material to prevent passage of visible light whereby contrast improves.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kim et al to include Takeda et al's protrusion made of light-shielding material motivated by the desire to prevent passage of visible light whereby contrast improves.

FIG.14

KIM 6774967

This protrusion is discontinuous from this other protrusion.



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien
Examiner
Art Unit 2871

/Andrew Schechter/
Primary Examiner, Art Unit 2871